

# Ad Hoc Sidewalk Committee Report

*(NOTE: The following report was issued by the Ad-Hoc Sidewalk committee and presented to the Board of Selectmen on July 23. The committee was appointed in April 2000 with the purpose of developing a comprehensive policy for sidewalk construction in town. It is reprinted here in its entirety with the exception of footnotes, maps and appendixes. The full report is available at town hall.--Ed)*

## BACKGROUND AND PURPOSE

Traffic volume and speed on Duxbury's streets has increased in recent years. This situation is attributed to an increase in population, more hectic lifestyles, and the growing tendency for people to rush to reach their destinations. These trends, coupled with the narrowness of many streets, lack of road shoulders, and lack of street lighting represent threats to pedestrian safety. Residents of Chestnut Street voiced their concern about safety issues along Chestnut Street and expressed their desire to have a sidewalk constructed. At the March 2000, Town Meeting,

the town voted to fund the construction of a sidewalk along Chestnut Street. Although the Planning Board requires that new sub-divisions build sidewalks, there are no planning guidelines for constructing sidewalks on existing streets. In April 2000, the Board of Selectmen appointed an Ad Hoc Sidewalk Committee ("the Committee") to recommend policies regarding sidewalk construction, addressing the following issues: 1) Identification of high traffic main feeder streets and pass-through streets, and prioritization of sidewalk construction projects; 2) Procedure for petitioners who wish to request sidewalks on their street; 3) Determination of responsibility for sidewalk maintenance (e.g., clearing snow, leaves, debris) and liability for injuries; 4) Establishment of sidewalk construction standards for specific categories of streets from rural, low volume roads, to urban, busy streets; and, 5) Identification of sidewalk finance options.

## APPROACH

The Committee undertook the assignment by developing the following statement that conveyed our philosophy toward sidewalk construction in Duxbury: "The mission of the Ad Hoc Sidewalk Committee is to recommend a comprehensive plan and policy for the construction of sidewalks to increase citizens' safety in a way that preserves the town's character and beauty."

Balancing the need for pedestrian safety on Duxbury's streets with the preservation of the historical and rural nature of the town was paramount in the minds of the Committee members. It was also felt that the town government's involvement in sidewalk construction would only be appropriate in instances where sidewalks would benefit the entire town, rather than merely the residents of a particular street. These prevailing attitudes guided much of the discussion and recommendations for the issues addressed by the Committee.

Based on current informa-

tion with a view to the future, the Committee then identified the main factors that would be used to determine the need for sidewalks to improve pedestrian safety. Streets were measured according to these criteria and final ratings were calculated by combining all factors. These combined ratings would serve as a starting point for determining sidewalk construction priorities.

The Committee then adopted a long-term view toward community safety by envisioning a network of streets with sidewalks so that residents could travel to destination points and residential neighborhoods. A conceptual series of sidewalk routes was devised which could evolve as the town developed.

Once the safety issue is addressed, other issues such as the degree to support by street residents, construction costs, road repair schedules, and etc. could be taken into consideration to determine annual construction plans.

## 1.0 PRIORITIES

The Committee was unanimous in citing safety as the number one consideration for establishing sidewalk construction priorities. Pedestrian traffic is heaviest in areas with destinations-schools, churches, the pool, library, shopping districts, post offices, historic sites,

etc. We studied a map of the town and created routes that would connect people and places. The first priority for proposed sidewalk construction attempts to construct sidewalks in the areas most frequently used by pedestrians. These areas are shown in Figure 1 as primary routes and represented by solid lines. Some of these routes include areas that currently have sidewalks that could be included in the

network.

## Sidewalk Talk: How Does Your Street Rate?

	Street Class	Road Width	Traffic Volume	Traffic Speed	Network Linkage	St./House Density	Street Functionality			TOTAL
Valley Street	2	2	0	3	0	1	0	0	0	8
Mayflower Road	3	1	0	3	0	0	2	1	0	10
King Caesar Road	3	2	1	1	0	3	0	1	0	11
Tobey Garden Road	3	1	2	3	2	1	0	1	0	13
Harrison Street	3	1	1	3	4	1	0	1	0	14
Alden Avenue	1	1	3	3	4	1	0	1	2	16
Lincoln Street	3	1	4	3	2	2	0	1	0	16
Powder Point Avenue	3	3	2	1	2	4	0	1	0	16
Washington Street	3	1	4	2	4	3	1	1	0	19
Saint George Street	3	1	4	2	4	2	1	1	2	20
Depot Street	3	3	4	3	4	2	2	0	0	21
Chestnut Street	3	1	5	2	4	4	2	1	0	22

Sidewalk Rating Sheet produced by the Ad Hoc Sidewalk Committee. See article for rating system and descriptions of each category. Maximum rating possible is 24, minimum is 2. This is only a representative list of streets based on available data. Powder Point Ave. data is for portion from Washington St. to P.P. Bridge. Lincoln Street data is for portion north of Rt. 14.



town. Collecting the data needed for the Rating Sheet is a time-consuming task, especially considering that there are over 350 streets in Duxbury. We were not able to provide data for all of the streets shown in Figure 1. The streets that are listed represent streets where partial data was readily available, streets the Committee considered as highest priorities for having sidewalks, and streets that represent a range for high

and low scores. Committee members completed the data collection for the streets on the Rating Sheet.

The Committee recommends using this rating system when evaluating the needs for sidewalks on any streets. Data would have to be collected for any street being considered. Some of the data collection could be done by residents; other data would have to be provided by the Duxbury Department of Public Works ("DPW"). The higher the total rating, the greater the need for a sidewalk. The criteria and process for obtaining the values for streets shown on the rating sheet are described below.

#### Street Classification

The Committee used classifications from the American Association of State Highway and Transportation Officials ("AASHTO") and applied them to selected streets. The classifications used were State Route, Primary Road, Collector Road, or Local Road.

*State Routes* are under the jurisdiction of the Massachusetts Highway Department. State Routes in Duxbury are Route 3, Route 3A (Tremont St.), and Route 53 (Summer St.) State Routes are not rated because the Town does not have authority along State Routes. The Committee does, however, endorse sidewalks or paths along all State Routes except

Route 3.

*Primary Roads* are main roads heavily used for getting from one area of town to another, to popular destinations, or between Duxbury and other towns. Examples are Bay Road, Tobey Garden, and Lincoln Street. Primary Roads receive a value of "3" on the rating scale.

*Collector Roads* carry traffic through to abutting lots, provide access to local streets, or

collect traffic from local streets. Examples are Soule Ave., Chandler Street, and East Street. Collector Roads receive a value of "2" on the rating scale.

*Local Roads* are primarily traveled by the residents of those roads, and only serve abutting lots. Examples are Hitty Tom Road, Onion Hill Road, and Duck Hill Road. Local Roads receive a value of "1" on the rating scale.

#### Roadway Width

The width of a roadway and shoulders (or lack thereof) is another factor in determining pedestrian safety. Wider roads provide more room for vehicles to maneuver and avoid pedestrians. A standard roadway width for Primary and Collector Roads is 22 feet. The width used for each road in the Rating Sheet was taken at a selected location considered to be representative of the width along the street. However, we acknowledge that street widths are generally not constant for the full length of most of the streets in Duxbury. The width shown in the Rating Sheet was measured from edge of pavement to edge of pavement when there was no curb or berm, and between the base of curb or berm when curbs or berms were present. Ratings for Roadway

In addition to creating the primary routes connecting destination points, the Committee also created a Sidewalk Rating Sheet which establishes criteria for a street to have a sidewalk. The Committee concluded that priority for the construction of sidewalks should be given to those streets that have the highest ratings on the Rating Sheet, and that are scheduled to be reconstructed or have substantial support for a sidewalk from the residents living on the street (70%). The final decision on whether a project goes forward would require a vote at Town Meeting. Whether the residents of a street with a proposed sidewalk should pay betterment for sidewalk construction is also tied into the rating sheet and would require a vote at Town Meeting.

### 1.1 SIDEWALK RATING SHEET

The Committee agreed that the selection process for determining which streets should be recommended for sidewalks should be based on objective rather than subjective criteria. The result is the Rating Sheet. This rating system contains seven criteria, which represent the main factors in determining the need for sidewalks. These criteria were then used to rate several streets throughout

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Width are as follows:

<u>Width</u>	<u>Rating</u>
Greater than 22 ft.	1
20-22 ft.	2
Less than 20 ft.	3

#### **Average Daily Traffic Volume**

The amount of traffic on a road has a direct impact on pedestrian safety.

The Committee obtained the volume measurements of the streets listed on the Rating Sheet by using the DPW's electronic counting device. The measurements were obtained by placing the traffic counter across a road for a 7 consecutive day period. The volume of traffic for each day was totaled, and an average was used for the Rating Sheet. Ratings for traffic volume are as follows:

<u>Vehicles</u>	<u>Rating</u>
5,000 +	5
4,000- 4,999	4
3,000- 3,999	3
2,000- 2,999	2
1,000- 1,999	1
0 - 999	0

#### **85% Traffic Speed**

The same electronic counting device used for measuring traffic volume also provided data on the speed of vehicles. The Committee examined the speed for 85% of the vehicles traveling on a road during a one-week period and averaged the values for the rating system.

The 85% speed measurement is a standard measurement used by engineers when evaluating traffic. The ratings are as follows:

<u>Speed</u>	<u>Rating</u>
41 mph +	3
36-40mph	2
31-35mph	1
0-30mph	0

#### **Network Linkage**

The Committee agreed that developing a network of sidewalks linked to one another, rather than randomly disconnected sidewalks, would best serve the town. Therefore, two designations were created for a street as it relates to our recommended routes.

- *Destination Link* is a street that provides linkage to major destinations in town such as the waterfront, schools, shopping areas, or the beach. Streets determined to be Destination Links receive a value of "4."

- *Neighborhood Link* is a busy street where a sidewalk would provide means for pedestrians to get to a safer, less busy street, but which may not have a sidewalk. Streets determined to be Neighborhood Links receive a value of "2."

#### **Household Density**

The number of households per mile provides a density ratio that the Committee used as a basis of comparison for various streets. Higher densities mean more potential for pedestrian traffic and greater need for sidewalks. Data for the number of households were obtained from a listing of house lots and numbers prepared by the Duxbury Fire Department. The ratings for Household Density Ratio are as follows:

<u>Households</u>	<u>Rating</u>
51 per mile +	4
41-50 per mile	3
31-40 per mile	2
21-30 per mile	1
0-20 per mile	0

#### **Street Functionality**

The Committee isolated three types of street functionality for the purposes of our rating system.

*Commercial Streets* are deemed to have a high number of pedestrians. Commercial Streets receive a value of "2."

*Public Streets* are streets that have ballparks, playgrounds, etc. Public Streets receive a value of "1."

*Municipal School Zone* is a special designation reserved for streets where there are public schools. Municipal School Zone Streets are deemed to have a high number of pedestrians. Municipal School Zone Streets receive a value of "2."

By adding the values obtained from the seven criteria on the Rating Sheet, we arrived at a Total Rating for each of the

streets listed. The maximum rating that a street can receive is 24; the minimum rating is 2. The Committee believes that these criteria will enable residents and town officials to make decisions regarding sidewalks based on objective criteria. Using this rating system, it is possible to compare streets and prioritize those that need sidewalks based on measurable criteria. We recommend that this rating system be adopted in all future sidewalk considerations.

## **2.0 PROCEDURE FOR PETITIONERS**

The Committee recognizes that there will be streets whose resident's request to have a sidewalk constructed. When this occurs, the residents should present a petition to the Selectmen with endorsement from 70% of the residents living on that street. The criteria from the Rating Sheet will be applied, and a rating will be calculated. If the rating meets the threshold of 15, then the request will be forwarded to the DPW for further consideration based on road construction plans and cost estimates. If the DPW deems the project acceptable, an article will be prepared for town meeting seeking approval for funding the construction of the proposed sidewalk.

## **3.0 MAINTENANCE & LIABILITY**



searched case law regarding maintenance and liability of town constructed sidewalks and how the maintenance relates to liability. Based on this research, the Committee concludes that the town should be responsible for any maintenance that requires repairs, but not for basic clearing, mowing or planting of the buffer strip, or snow removal. Some case law excerpts are given below.

Towns are bound to keep any sidewalks that they constructed in repair so that they may be "reasonably safe and convenient for travelers" (Cpt. 84 51, S15). In order to recover under this section a defect must be one that might have been remedied by reasonable care and diligence and the city should have had reasonable notice of the defect. (Bern v. City of Newton (1941)). Conditions that might constitute a defect under the above standard may vary by the locations traffic and population density (Green v. Town of Wilmington (1959) 158 NE 2d 143, 339 Mass 142). Whether a defect exists is a question for the jury and they must apply the "Sole Cause Rule". This rule requires that where a person is hurt because of a defect it must appear that the defect was the sole

cause of the person's injury and the negligence of a 3rd party did not contribute to the cause in anyway. (Coyne v. Town of Arlington (1951) 97 N.E. 2d 739, 329 Mass 233).

**Snow/Ice Removal** - The Town has the authority to enact by-laws requiring owners of property abutting sidewalks to keep the same free from ice and snow (Cpt 85 S4 & S5). Such by-laws shall determine the time and manner of removal and shall affix penalties, not exceeding \$10.00 for each violation. Towns can remove the snow/ice and provide that the assessors may assess upon the abutting estates the whole or any part of the cost of such removal (Cpt. 85 S6). Any person owning land abutting sidewalks may procure the exemption of such assessment by a stipulation in writing to selectmen that he will remove snow/ice in the manner selectmen shall direct. (Cpt 85 S7). Whether the town is liable for an injury caused by snow/ice is a question of fact for the jury as to whether the condition constituted a "defect" as explained above.

## **4.0 SIDEWALK CONSTRUCTION STANDARDS**

Both the Town of Laxbury and the State of Massachusetts have standards for the construction of sidewalks. The State standards are contained in the Highway Design Manual, and the Town's standards are contained in the Planning Board's Standards for New Subdivi-

sions. Another source of standards is the American Association of State Highway and Transportation Officials ("AASHTO"). Excerpts from each of these organizations are included as Appendices. Photos of sidewalks in neighboring towns that illustrate the items discussed below are included in Appendix A. These standards helped guide the Committee in developing recommendations. The factors we considered most important in sidewalk construction are safety, preservation of trees and vegetation, aesthetics, land availability, drainage, durability, maintenance and cost. The Committee also recognizes that various streets in town will have specific circumstances that will affect the extent to which some of these criteria are implemented.

### **4.1 Width**

The minimum width recommended is 4 feet 6 inches. This width is consistent with the Planning Board's criteria for new sidewalks, and is the minimum width required for commercial snow-removal equipment. Widths less than 4 feet 6 inches begin to restrict the ability of people walk side by side or pass each other without one of them having to step off the sidewalk. It takes into account

the narrow right-of-ways ("ROW") throughout the town and typically small widths of land within the ROW available for sidewalks. Using the minimum width would also help reduce impacts to vegetation and keep costs at a minimum when there are land restrictions. However, the Committee endorses constructing a wider sidewalk when the opportunity is available and constructing sidewalks that comply with the American Disabilities Act. References:

### **4.2 Buffer**

The Committee believes having a sidewalk set back from the curb or edge of roadway improves safety and provides an aesthetically pleasing appearance. The area between the road and the sidewalk should be grass and provide as much width as possible, with a minimum of 2 feet being the goal. This buffer can vary in width to allow the sidewalk to transition. The buffer allows the profile of the sidewalk to remain at the top of the curb instead of dipping down to meet the roadway at each driveway. It also provides space to place utility poles, mail boxes, etc. so they are not placed in the sidewalk.

### **4.3 Surface**

The two types of surfaces most often used for low maintenance sidewalks are concrete and asphalt. Although concrete is more durable and requires less maintenance, it is also more expensive. Asphalt blends



better with natural surroundings and is perceived to be closer to maintaining the rural character of Duxbury. Asphalt is less expensive and, if constructed properly, will provide a long-lasting surface. Appendix A shows photos of sidewalks from neighboring towns. These photos indicate that asphalt is the surface used most often in communities similar to Duxbury.

#### 4.4 Curbs

The most common types of curbs are made of granite, concrete or asphalt. They prevent erosion from the edge of the roadway due to storm water runoff and can be either sloped or vertical. Curbs help restrict vehicles to the pavement area and prevent vehicles from parking alongside of the road and blocking sidewalks. Curbs should be used when sidewalks are placed along or close to the edge of the road. Granite curbing is the preferred type, but can be a major expense to the project. When sidewalks can be sited a safe distance from the roadway, the Committee prefers not using curbs. In addition to the expense they add to the project, they are often associated with an urban look, require additional work to collect and

distribute storm water runoff and require curb cuts for driveways and handicapped access. An asphalt berm is another alternative to curbing that help to maintain a more rural character when erosion from storm water runoff is a concern.

### 5.0 FINANCING

#### 5.1 Federal Funding

The Transportation Equity Act for the 21st Century, commonly known as TEA-21, has numerous provisions that relate to improving conditions and safety for pedestrians. However, only the Transportation Enhancement and Safety Set-aside Programs would be applicable for the types of projects relevant to this report. This is because other programs are for projects on the federal-aid Highway System where the Enhancement and Safety Set-aside Programs can be used on local and minor collector roads. There is a list of 13 eligible project types under the Enhancement Program. Areas that are relevant to this report are:

- a. Facilities for bicycles and pedestrians;
- b. Safety and educational programs for pedestrians and bicyclists; and
- c. Landscaping and other scenic beautification.

The Metropolitan Area Planning Council ("MAPC") issued guidelines for this program in January 2001. Application assistance is available.

Pedestrian projects are generally eligible for funding under these programs. However, eligibility does not guarantee

that pedestrian projects will be funded. States and Metropolitan Planning Organizations ("MPOs") retain broad control over project selection procedures and choices and can set their own priorities for funding within the categories.

Funding sidewalk construction projects through federal programs is certainly prudent from a financial perspective. However, the application process is lengthy and there is a lot of competition with other communities for the funding. Once a community is selected for the funding, it is often years before it actually receives the money.

The Committee recommends pursuing funding through these programs, but should not depend on this type of funding as the only means for financing sidewalk construction programs.

#### 5.2 State Funding

In order for the State to fund a sidewalk construction project, the construction would have to be along a State Route and lie within the State ROW. The State would then fund the design and construction. Areas where the Committee endorses sidewalks that would qualify for state funding would be along Route 3A and Route 53. Duxbury's DPW and Highway Safety Advisory Committee

have met with representatives from the Massachusetts Highway Department's District Office and discussed the possibility of constructing a sidewalk along Route 3A between Chestnut Street (Bailey's Corner) and Saint George Street. The State was receptive to the suggestion if Route 3A was to be reconstructed, and if the town supported the project. Since state standards would govern the construction, it is likely Route 3A would be widened. The width would increase from approximately 25 feet to 30 feet with an additional five-foot wide grass shoulder on each side. The sidewalk would then be located outside of the grass shoulder. It has been the State's experience that communities typically do not like widening roads through their town. Therefore, the town would have to show their support of the project before it could be initiated. The section of 3A from Chestnut to Depot Street could seem to be most feasible for sidewalk construction. This is due to more room for widening the road to standards and the poorer condition of the road surface.

#### 5.3 Town Funding

The Committee has been researching the topic of financial assistance to municipalities and also networking with communities that have recently undertaken sidewalk projects. The towns of Halifax, Hingham, and Kingston have primarily



funded sidewalk construction through their respective town budgets, voluntary contributions, and Federal and State reimbursement programs. The current Chestnut Street sidewalk project is also being funded through the DPW Budget, with no betterments being charged to residents. This was the result by a vote at Town Meeting in March of 2000.

Although funding the projects through the town budget is less desirable from a fiscal perspective, it appears town funding is the most expeditious means for accomplishing the town's needs for sidewalks. The Committee recommends that the town set aside funds on an annual basis for sidewalk construction projects. The DPW would submit sidewalk construction projects in accordance with the guidelines contained in this report.

### **Betterments**

The Committee feels the decision of whether or not the town should charge a betterment for the construction of a sidewalk should be based on the score from the Rating Sheet. The Committee was unanimous in its view that betterments should not be charged to residents if the street receives a rating of 15 or higher, has a benefit to the town as a whole, or is a safety issue. For streets that receive a rating below 15, betterments should be considered.

For streets that are rated 5 or below, the Committee recommends that 100 percent betterments be considered.

Due to the town's layout and street network, certain streets are used more frequently to reach Route 3, commercial and popular public destinations, churches, etc. Clearly, the highest amount of traffic volume is created by residents who do not live on that street. In other words, people all over town use these streets; the Committee believes that the expense to make these streets safe for pedestrians and vehicles should be shared by the entire town. At the Annual Town Meeting in March 2000, voters demonstrated their support of this concept when they agreed to fund the Chestnut Street sidewalk construction.

For streets identified with a priority need for a sidewalk, funds would be sought at town meeting from the available sidewalk construction budget, managed by the Town's Selectmen and DPW Director.

### **6.0 Goals**

In order to improve the safety on some of the most heavily traveled streets, the Committee suggests the town budget \$100,000 per year for the construction of approximately one mile of sidewalk per year. At this rate, the time to construct the primary routes shown on the map will be ap-

proximately five years.

The committee also recommends that the town prepare a long-range plan for constructing sidewalks along the routes designated by the Committee. Although another street may take precedence over a street within the proposed routes because of priorities established by the Rating Sheet, the basic goal should be to construct sidewalks to complete the proposed routes and thereby provide safe walking conditions for pedestrians in the busiest parts of Duxbury. Connecting neighborhoods isolated from the proposed routes by busy streets should also be sought.

Since Chestnut Street is a pilot project for sidewalk construction, the outcome should be assessed before beginning future sidewalk projects.

*Ad Hoc Duxbury Sidewalk Committee: Jeff Lewis, chairman; Phyllis Erickson, Jack Hill, Don Larose, Laura Lawson, Priscilla Nissi, Mary Ott, secretary; Margaret Kearney (Ex Officio) and Walter Tonaszuck (Ex Officio)*